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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/875,154	06/07/2001	Kim B. Roberts	13528-155US	7276

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EXAMINER	
PHAN, TRI H	

ART UNIT	PAPER NUMBER
2661	

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/875,154	ROBERTS ET AL.	
	Examiner	Art Unit	
	Tri H. Phan	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13, 16-29* is/are rejected.

7)☐ Claim(s) *14,15,30 and 31* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment/Arguments

1. This Office Action is in response to the Response/Amendment filed on May 13th, 2005. Claims 1-31 are now pending in the application.

Drawings

2. The drawings are objected to because all blocks in Figures 1-4 should be labeled with descriptive legends based on 37 C.F.R. § 1.84(o) for supporting the objection in the Rules and M.P.E.P. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-13 and 16-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over **MacDonal, Robert I.** (U.S.2002/0159681; hereinafter refer as '**MacDonal**') in view of **McGill, Richard T.** (U.S.5,436,886; hereinafter refer as '**McGill**').

- In regard to claims 1 and 16, **MacDonal** discloses in Figs. 4-7 and in the respective portions of the specification about the *network node and system adapted to control protection switching in the node of the communications network* ('optical protected crossconnect'; For example see Fig. 4; Abstract), *the node comprising a multi-stage switch fabric* (For example see Fig. 5; pages 1-2; para [0009]) *having the first stage including the respective plurality of stage-1 switch elements* ('first external stage'; For example see Fig. 6; page 2, paras [0011-0015]), *the system comprises the interface* ('input port interface') *operatively coupled to a set of two or more stage-1 switch elements, the interface being adapted to aggregate a plurality of channels of the communications network into the set of stage-1 switch elements* (For example see Fig. 4A, 5A; page 2, para [0021]; page 4, para [53]) *and the toggle* ('switches 125 and 142') *adapted to control the set of stage-1 switch elements to selectively map traffic between a middle stage of the switch fabric and a selected one of the plurality of channels* (For example see page 2, para [0021]; pages 2-3, para [0038]). **MacDonal** fails to explicitly disclose about the "*selected one of the set of any two of the plurality of channels*". However, such implementation is known in the art.

For example, **McGill** discloses in Figs. 1-12 and in the respective portions of the specification about the switch fabric with multiple stage switching (For example see Fig. 12) in dual switch plane operation (For example see Fig. 1; Abstract); wherein, when detecting the

failure, the tagging means ("*toggle*") switches the traffic from one to another redundant multiplexer 'AX' (For example see Figs. 3-10; col. 5, line 58 through col. 6, line 7; wherein each AX, e.g. AX0 or AX1, receives signals from line cards LC0 and LC1, e.g. "*selected one of the set of any two of the plurality of channels*").

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the switch fabric with dual switch plane as taught by **McGill** in the **MacDonal**'s switch fabric, with the motivation being to utilize the dual plane mode of operation for better reliability and maintainability as disclosed in **McGill**: col. 1, lines 6-10.

- Regarding claims 2 and 17, in addition to features in base claims 1 and 16 (see rationales pertaining the rejection of base claims 1 and 16 discussed above), **MacDonal** further discloses wherein the *first stage comprises one of the input stage and the output stage of the multi-stage switch fabric* (For example see Fig. 6; page 3, para [51]).

- In regard to claims 3 and 18, in addition to features in base claims 1 and 16 (see rationales pertaining the rejection of base claims 1 and 16 discussed above), **MacDonal** further discloses wherein the *set of two or more stage-l switch elements comprises less than all of the stage-l switch elements of the multi-stage switch fabric* (For example see Fig. 5 shows 7 stage-1 elements; wherein each interface is connected to 3 stage-1 elements, which is less than 7).

- Regarding claims 4-5 and 19-20, in addition to features in base claims 1 and 16 (see rationales pertaining the rejection of base claims 1 and 16 discussed above), the combination of **MacDonal** and **McGill** further discloses wherein the *set of any two of the plurality of channels comprises a working channel* ('working plane') *and a protection channel* ('protection plane') *of the communications network* (For example see Figs. 2-3; col. 4, line 40 through col. 5, line 47; wherein "*the protection channel is provisioned and associated with the working channel*" through the use of symmetric and asymmetric operation as claimed in the claim invention 5 and 20).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the switch fabric with dual switch plane as taught by **McGill** in the **MacDonal**'s switch fabric, with the motivation being to utilize the dual plane mode of operation for better reliability and maintainability as disclosed in **McGill**: col. 1, lines 6-10.

- In regard to claims 6 and 21, in addition to features in base claims 1 and 16 (see rationales pertaining the rejection of base claims 1 and 16 discussed above), the combination of **MacDonal** and **McGill** further discloses wherein the *protection channel is dynamically allocated in response to detection of the network resource failure affecting traffic flow through the working channel* (For example see **McGill**: Figs. 3-10; col. 8, lines 7-26).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the switch fabric with dual switch plane as taught by **McGill** in the **MacDonal**'s switch fabric, with the motivation being to utilize the dual plane

mode of operation for better reliability and maintainability as disclosed in **McGill**: col. 1, lines 6-10.

- Regarding claims 7-9 and 22-24, in addition to features in base claims 1 and 16 (see rationales pertaining the rejection of base claims 1 and 16 discussed above), the combination of **MacDonal** and **McGill** further discloses *wherein the interface comprises at least two port cards, each port card being adapted to convey traffic between at least two respective channels* ('LC' line card 0 and 1) *of the communications network and the set of stage-1 switch elements* and *wherein two or more interfaces are operatively coupled to respective sets of stage-1 switch elements* (For example see **McGill**: Figs. 1-10).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the switch fabric with dual switch plane as taught by **McGill** in the **MacDonal**'s switch fabric, with the motivation being to utilize the dual plane mode of operation for better reliability and maintainability as disclosed in **McGill**: col. 1, lines 6-10.

- In regard to claims 10 and 25, in addition to features in base claims 1 and 16 (see rationales pertaining the rejection of base claims 1 and 16 discussed above), **MacDonal** further discloses *wherein the respective sets of stage-1 switch elements are non-overlapping* (For example see page 2, para [0010]; wherein the input optical signals are switching to a plurality of locations in a non-blocking manner, e.g. no overlapping signal connection at the port modules)

and *wherein the number of stage-1 switch elements within each set is the same* (For example see Figs. 5, 5A).

- Regarding claims 11-13 and 26-27, in addition to features in base claims 1 and 16 (see rationales pertaining the rejection of base claims 1 and 16 discussed above), **MacDonal** further discloses *wherein the number of stage-1 switch elements within each set is the same* (For example see Figs. 5, 5A).

McGill also discloses wherein *the multi-stage switch fabric comprises a plurality of parallel switch cards* ('port card') *having the respective plurality of stage-1 switch elements* ('AX0 and AX1') *corresponding set of two or more stage-1 switch elements of each one of the plurality of parallel switch cards* (For example see Figs. 1-10).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the switch fabric with parallel port cards and dual switch plane as taught by **McGill** in the **MacDonal**'s switch fabric, with the motivation being to utilize the dual plane mode of operation for better reliability and maintainability as disclosed in **McGill**: col. 1, lines 6-10.

- In regard to claims 28-29, in addition to features in base claims 1 and 16 (see rationales pertaining the rejection of base claims 1 and 16 discussed above), the combination of **MacDonal** and **McGill** further discloses *wherein the set of stage-1 switch elements comprises the corresponding set of stage-1 switch elements* ('AX0 and AX1) *and switch element* ('tagging means') *of each one of the plurality of parallel switch cards* (For example see Figs. 2-3).

Response to Amendment/Arguments

5. Applicant's arguments filed on May 13th, 2005 with respect to claims 1-7, 9-14, 16-22, and 24-30 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

6. Claims 14-15 and 30-31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Corbalis et al. (U.S.6,882,766), **Lau, Peter S. Y.** (U.S.6,052,373), **Eijk et al.** (U.S.6,771,908), **MacDonald, Robert I.** (U.S.6,567,576) and **Ghaffar, A. et al.** ("Middle stage requirements and blocking probability validation for three stage broadcasting Clos networks", Communications, 1996. ICC 96, 1996 IEEE International Conference on Volume 2, 23-27 June 1996, page(s):1050 – 1054) are all cited to show devices and methods for improving the switch matrix with protection in the telecommunication architectures, which are considered pertinent to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tri H. Phan, whose telephone number is (571) 272-3074. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau T. Nguyen can be reached on (571) 272-3126.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(571) 273-8300

Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office, whose telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tri H. Phan
August 19, 2005

BRIAN NGUYEN
PRIMARY EXAMINER